

**C900 CentraPlex
Master Control and Network Interface**

- A. Manufacturers:
 - 1. Earthsafe Systems C900
 - 2. Engineer Approved Equal

- B. General: The fuel system controls shall be a Master Control System based on the C900 CentraPlex Controller. The Master controller shall be in lieu of individual controllers for day tanks, duplex pump sets, filtration units, fill stations, and multi-tank selection. The Master Controller Network shall monitor status of all individual system elements, provide an operator interface, and provide connections to other building management systems.

- C. Design Criteria:
 - 1. The Master Controller shall provide the following functions:
 - a. Day Tank Level Control: Monitoring of day tank level sensors (high alarm, fill stop, fill start, low alarm) and leak sensors. Control of inlet control valves. Control of return flow pumps.
 - b. Duplex Pump Control: Pump selection and start / stop control. Pump monitoring for pressure, flow, or motor current. Operation of secondary pump as alternating, lead / lag, or twin. Pump operating hour monitoring.
 - c. Filtration / Polishing Control: Pump On – Off Control, Filter Cycle selection based on time selection, time / day selection, or volume selection. Filter monitoring for water, differential pressure, and leak.
 - d. Tank Fill System: Monitoring of high level sensors, control of inlet control valves. Annunciation of tank level and alarms at fill station.
 - e. Multi-Tank Selection: Control of fuel oil supply and return control valves. Monitoring of tank high and low alarms. Manual and automatic selection of fuel supply tanks. Valve control for filtration.

 - 2. The Master Controller shall include the following: (a) graphic user interface with touch screen navigation, (b) integration of operating status information for all system control modules, (c) central alarm annunciation, (d) integration of tank level gauge / leak monitoring unit to provide common output to building management system (BMS), (e) provide BMS data integration using Modbus protocol, (f) provide 8 programmable dry contact relays for integration with generator controls, paralleling gear, fire alarm systems, or security systems.

 - 3. The Master Controller shall be a NEMA 4 enclosure with minimum 6 inch diagonal color touch screen. The panel shall include an alarm horn, and acknowledge switch. The NIM shall be powered by an independent 120 VAC circuit and shall include a 24 VDC power supply

- D. Accessory Equipment:
 - 1. Tank Level Functions: Where indicated on the drawings for aboveground tanks the NIM shall integrate tank level transmitters to provide tank level and volume information instead of integrating an independent tank gauge.
 - 2. Tank / Pipe Leak Sensors: Where indicated on the drawings, the NIM shall integrate tank, pipe, sump, or floor leak sensors.
 - 3. UPS: Where indicated on the drawings, the NIM shall include an Uninterruptible Power Supply